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District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-101
August 1, 2011

Permit 275763

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address	2. OGRID Number
APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	873
	3. API Number 30-015-46528

4. Property Code	5. Property Name	6. Well No.
326768	PALMILLO 20 STATE COM	365H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
E	21	19S	28E		1905	N	370	W	Eddy

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
E	20	19S	28E	E	1905	N	50	W	Eddy

9. Pool Information

WINCHESTER; BONE SPRING, WEST	97569

Additional Well Information

11. Work Type	12. Well Type	13. Cable/Rotary	14. Lease Type	15. Ground Level Elevation
New Well	OIL		State	3459
16. Multiple	**17. Proposed Depth**	**18. Formation**	**19. Contractor**	**20. Spud Date**
N	13912	Bone Spring		2/28/2020
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☐ **We will be using a closed-loop system in lieu of lined pits**

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	48	325	235	0
Int1	12.25	9.625	36	3000	625	0
Prod	8.75	5.5	17	8845	712	2500
Prod	8.5	5.5	17	13912	938	8845

Casing/Cement Program: Additional Comments

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	3000	1500	
Double Ram	3000	3000	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. **I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒, if applicable.** Signature:		**OIL CONSERVATION DIVISION**		
Printed Name:	Electronically filed by Sorina Flores	Approved By:	Raymond Podany	
Title:	Supv of Drilling Services	Title:	Geologist	
Email Address:	sorina.flores@apachecorp.com	Approved Date:	12/24/2019	Expiration Date: 12/24/2021
Date:	12/17/2019 Phone: 432-818-1167	Conditions of Approval Attached		

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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name

4 Property Code	5 Property Name	6 Well Number
	PALMILLO 20 STATE COM	365H

7 OGRID NO.	8 Operator Name	9 Elevation
	APACHE CORPORATION	3459'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
E	21	19S	28E		1905	NORTH	370	WEST	EDDY

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	20	19S	28E		1905	NORTH	50	WEST	EDDY

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.

No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

16

GEODETIC DATA
NAD 83 GRID – NM EAST

SURFACE LOCATION (SL)
N 599529.3 – E 585959.7
LAT: 32.6480701° N
LONG: 104.1883561° W

FIRST TAKE POINT (FTP)
1905' FNL – 100' FEL (SEC.20)
N 599524.6 – E 585489.8
LAT: 32.6480589° N
LONG: 104.1898829° W

LAST TAKE POINT (LTP)
1905' FNL – 100' FWL (SEC.20)
N 599478.3 – E 580477.6
LAT: 32.6479491° N
LONG: 104.2061676° W

BOTTOM HOLE (BH)
N 599477.8 – E 580427.6
LAT: 32.6479480° N
LONG: 104.2063300° W

A: FOUND BRASS CAP "1941"
N 596120.3 – E 580368.7

B: FOUND BRASS CAP "1941"
N 601382.0 – E 580382.8

C: FOUND BRASS CAP "1941"
N 601430.2 – E 585595.5

D: FOUND BRASS CAP "1941"
N 601458.8 – E 588190.7

E: FOUND BRASS CAP "1941"
N 601487.4 – E 590787.6

F: FOUND BRASS CAP "1941"
N 598852.6 – E 590787.1

G: FOUND BRASS CAP "1941"
N 596216.2 – E 590790.1

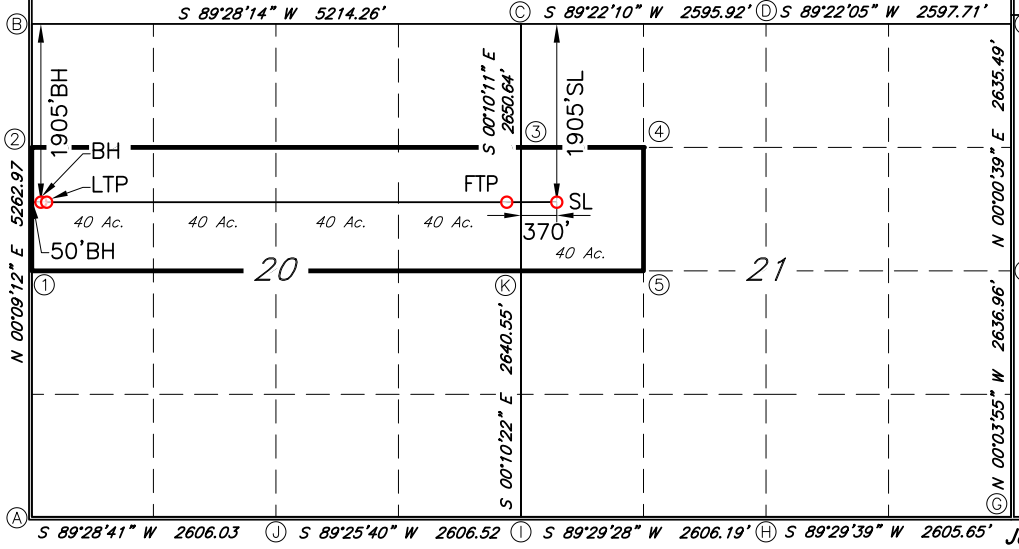
H: FOUND BRASS CAP "1941"
N 596193.2 – E 588185.2

I: FOUND BRASS CAP "1941"
N 596170.1 – E 585579.6

J: FOUND BRASS CAP "1941"
N 596144.1 – E 582974.0

K: FOUND BRASS CAP "1941"
N 598801.3 – E 585587.6

CALCULATED POINTS
1: N 598751.2 – E 580375.7
2: N 600066.6 – E 580379.2
3: N 600115.7 – E 585591.6
4: N 600129.3 – E 586890.4
5: N 598814.1 – E 586887.8



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date

Printed Name

E-mail Address

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

07-19-2019
Date of Survey

F Signature and Seal of Professional Surveyor:

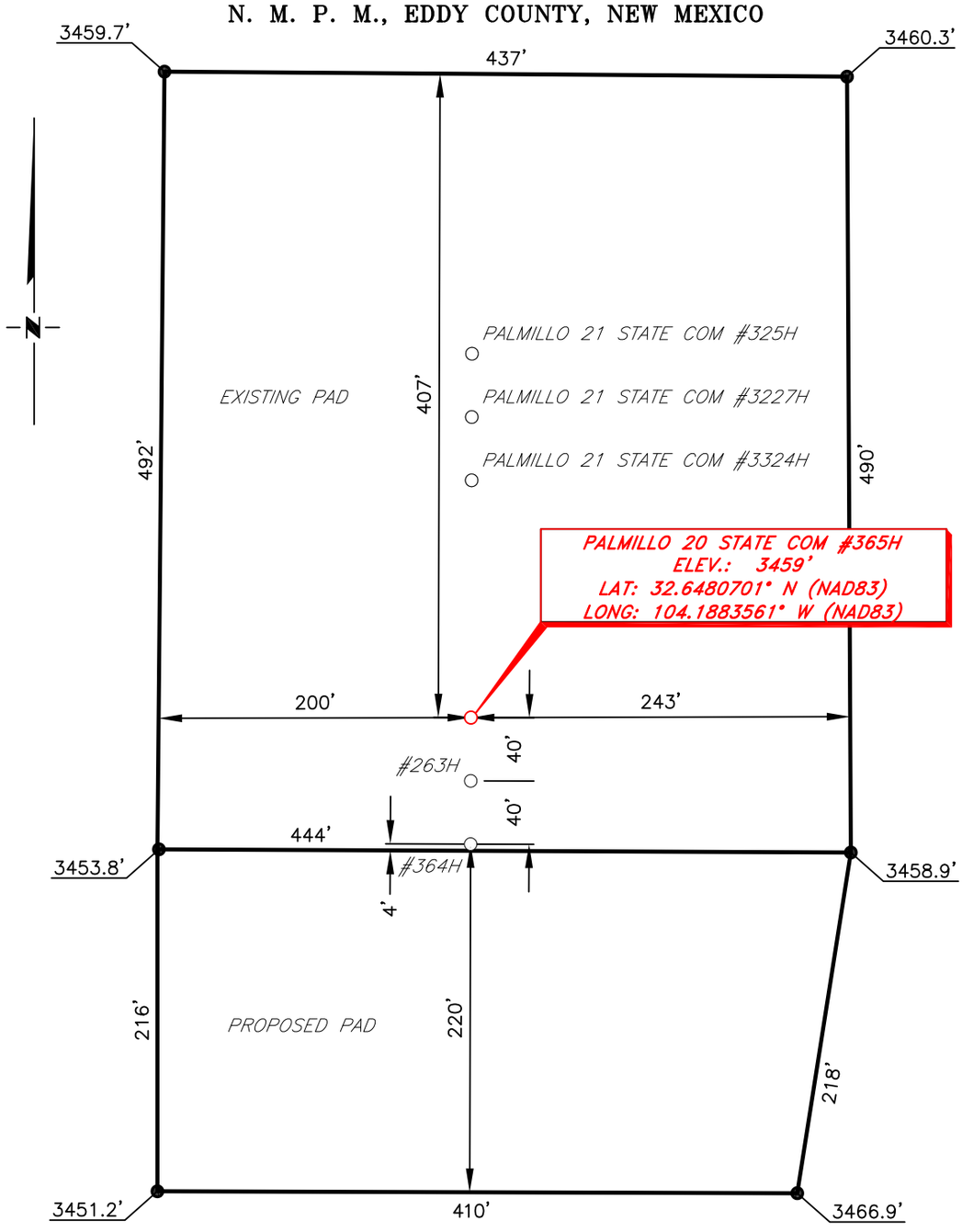
JEFFREY L. FANSLER
NEW MEXICO
10034
PROFESSIONAL SURVEYOR

10034
Certificate Number

CHANGE FTP/LTP/BH: 11.19.19 NAD83

Job No.: LS19070768R

APACHE CORPORATION
PALMILLO 20 STATE COM #365H
(1905' FNL & 370' FWL)
SECTION 21, T19S, R28E
N. M. P. M., EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of CR–246 (Millman Rd.) and CR–247 (Hillbilly Rd.), Go Southwest on CR–247 (Hillbilly Rd.) approx. 0.8 miles and turn right; Turn right and go West approx. 0.6 miles to lease road on the right; Turn right and go Northwest approx. 0.3 miles to lease road on the left; Turn left and go West approx. 1.2 miles to lease road on the left; Turn left and go South approx. 0.3 miles to proposed location on the left.

SCALE: 1" = 100'
0 50' 100'

BEARINGS ARE GRID NAD 83 NM EAST
DISTANCES ARE HORIZ. GROUND.

I, Jeffrey L. Fansler, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Jeffrey L. Fansler NM PS 10034

JEFFREY L. FANSLER NEW MEXICO 10034 7/19/19 PROFESSIONAL SURVEYOR

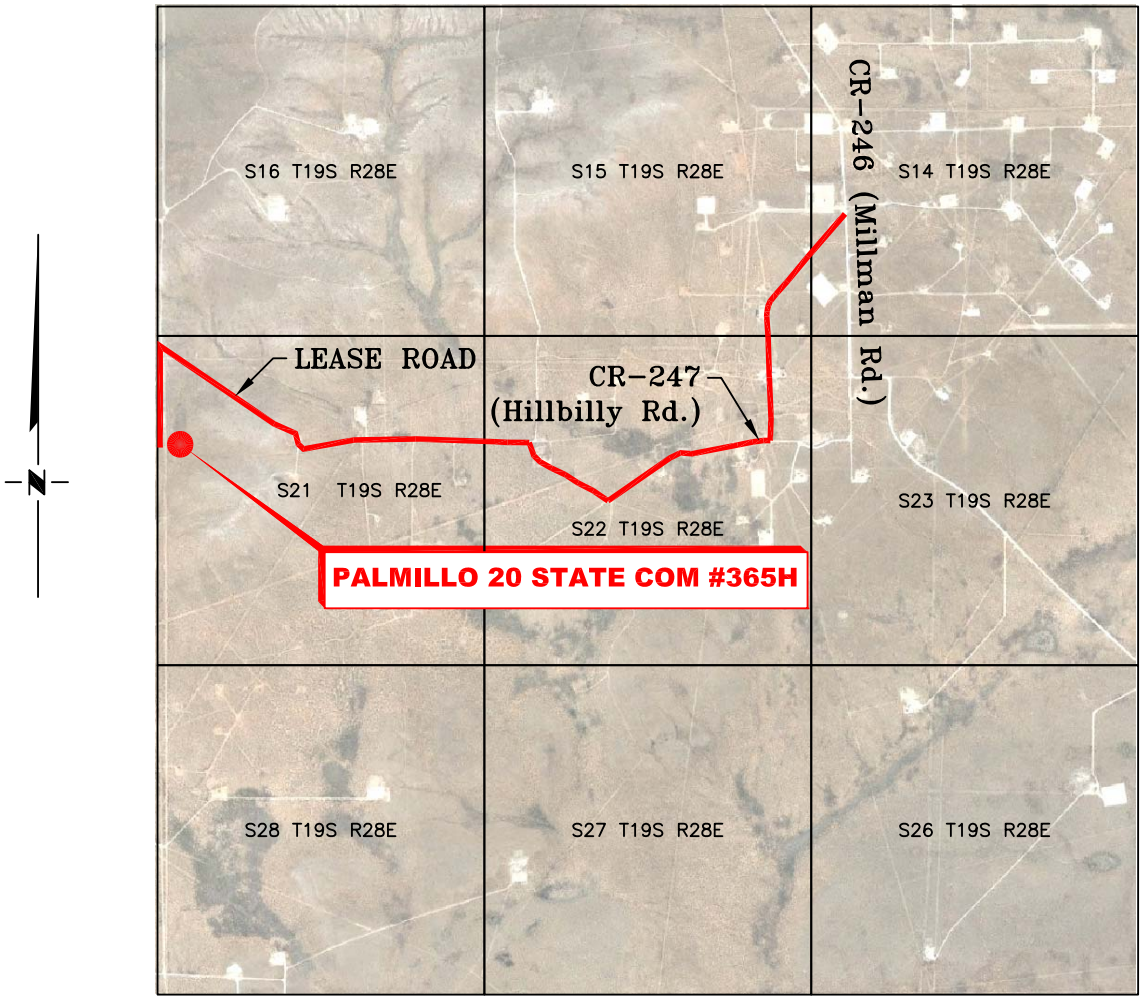
DATE: 08–14–2019		
NO.	REVISION	DATE
1		
2		
3		
4		

RRC SURVEYING, LLC
701 S. CECIL ST., HOBBS, NM 88240 (575) 964–8200

SCALE: 1" = 100'
SURVEYED BY: AB/RU
DRAWN BY: JBT
APPROVED BY: JLF
JOB NO.: LS19070768_365H
SHEET: PAD

VICINITY MAP

NOT TO SCALE



SECTION 21, TWP. 19 SOUTH, RGE. 28 EAST, N. M. P. M., EDDY COUNTY, NEW MEXICO

OPERATOR: Apache Corporation
LEASE: Palmillo 20 State Com
WELL NO.: 365H

LOCATION: 1905' FNL & 370' FWL
ELEVATION: 3459'

NO.	REVISION	DATE

JOB NO.: LS19070768
DWG. NO.: 19070768_365V

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: N / A
DATE: 07-19-2019
SURVEYED BY: AB/RU
DRAWN BY: JBT
APPROVED BY: JLF
SHEET: 1 OF 1

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GAS CAPTURE PLAN

Date: 12/24/2019

☒ Original
☐ Amended - Reason for Amendment:

Operator & OGRID No.: [873] APACHE CORPORATION

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
PALMILLO 20 STATE COM #365H	30-015-46528	E-21-19S-28E	1905N 0370W	1400	Flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to LUCID ENERGY DELAWARE, LLC and will be connected to LUCID ENERGY DELAWARE, LLC Low Pressure gathering system located in Eddy County, New Mexico. It will require 2500' of pipeline to connect the facility to Low Pressure gathering system. APACHE CORPORATION provides (periodically) to LUCID ENERGY DELAWARE, LLC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, APACHE CORPORATION and LUCID ENERGY DELAWARE, LLC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at LUCID ENERGY DELAWARE, LLC Processing Plant located in Sec. 20, Twn. 19S, Rng. 28E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on LUCID ENERGY DELAWARE, LLC system at that time. Based on current information, it is APACHE CORPORATION's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Comments

Permit 275763

PERMIT COMMENTS

Operator Name and Address:	API Number:
APACHE CORPORATION [873] 303 Veterans Airpark Ln Midland, TX 79705	30-015-46528
	Well: PALMILLO 20 STATE COM #365H

Created By	Comment	Comment Date
sflores	Apache respectfully request approval to utilize a spudder rig to pre-set surf csg. Detailed operations attached.	12/11/2019
sflores	The gas produced from production facility will be dedicated to DURANGO MIDSTREAM, LLC not LUCID ENERGY. Durango Midstream, LLC not available in pick list provided. Please see correct GCP attached.	12/17/2019

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
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Santa Fe, NM 87505

Form APD Conditions

Permit 275763

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address:	API Number:
APACHE CORPORATION [873] 303 Veterans Airpark Ln Midland, TX 79705	30-015-46528
	Well: PALMILLO 20 STATE COM #365H

OCD Reviewer	Condition
rpodany	Will require a directional survey with the C-104
rpodany	Cement is required to circulate on both surface and intermediate1 strings of casing

5D Plan Report

Apache Corporation

Field Name: *Apache NM (Nad 83 NMEZ)*
Site Name: *Palmillo 20 SC 366H,264H,365H,263H*
Well Name: *Palmillo 20 SC 365H*
Plan: *P1:V1 (Current plan)*

25 November 2019

Palmillo 20 SC 365H
Eddy Co, New Mexico

Plan Data for Palmillo 20 SC 365H

Plan Point Information:

MD (USft)	Inc (°)	Az (°)	TVD (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)	VSec (USft)	DLS (DLSU)	Comments
0.00	0.00	0.00	0.00	-0.00	-0.00	599529.30	585959.70	0.00	0.00	
1000.00	0.00	0.00	1000.00	-0.00	-0.00	599529.30	585959.70	0.00	0.00	Nudge
1332.77	3.33	14.22	1332.58	9.37	2.37	599538.67	585962.07	-2.46	1.00	Hold
2332.78	3.33	14.22	2330.91	65.64	16.63	599594.94	585976.33	-17.23	0.00	Drop
2665.55	0.00	0.00	2663.49	75.00	19.00	599604.30	585978.70	-19.69	1.00	Hold
8081.73	0.00	0.00	8079.67	75.00	19.00	599604.30	585978.70	-19.69	0.00	KOP
8845.10	91.60	265.23	8556.95	34.19	-470.13	599563.49	585489.57	469.79	12.00	LP
9265.49	91.60	265.23	8545.19	-0.76	-888.90	599528.54	585070.80	888.87	0.00	Turn
9477.40	91.60	269.47	8539.26	-10.55	-1100.45	599518.75	584859.25	1100.50	2.00	Hold
10777.40	91.60	269.47	8502.96	-22.57	-2399.89	599506.73	583559.81	2400.00	0.00	T1/Build
10873.81	93.53	269.47	8498.65	-23.46	-2496.19	599505.84	583463.51	2496.30	2.00	Hold
11898.13	93.53	269.47	8435.61	-32.90	-3518.53	599496.40	582441.17	3518.68	0.00	Drop
11979.54	91.90	269.47	8431.76	-33.65	-3599.84	599495.65	582359.86	3600.00	2.00	T2
13912.94	91.90	269.47	8367.66	-51.50	-5532.10	599477.80	580427.60	5532.34	0.00	PBHL 365H

Plan Data for Palmillo 20 SC 365H

Target Set Information:
Name: Palm20SC365
Position offsets from Slot centre

Name	TVD (USft)	Elevation (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)
NP 365H	8079.67	-4594.67	75.00	19.00	599604.30	585978.70
FTP 365H	0.00	3485.00	-4.70	-469.90	599524.60	585489.80
T1	8502.96	-5017.96	-22.57	-2399.89	599506.73	583559.81
T2	8431.76	-4946.76	-33.65	-3599.84	599495.65	582359.86
LTP 365H	8369.32	-4884.32	-51.00	-5482.10	599478.30	580477.60
PBHL 365H	8367.66	-4882.66	-51.50	-5532.10	599477.80	580427.60

Plan Data for Palmillo 20 SC 365H

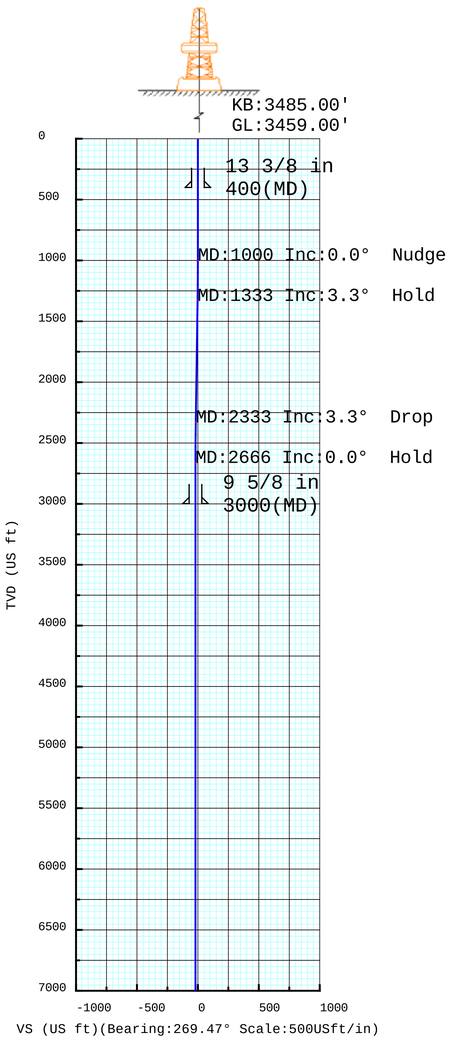
Field: Apache NM (Nad 83 NMEZ)
Map Unit: USFt Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / New Mexico East (ftUS)

Site: Palmillo 20 SC 366H,264H,365H,263H
Unit: USFeet TVD Reference:
Company Name: Apache Corporation
Position: Northing: 600603.60USft Latitude: 32.651023°
Easting: 586028.00USft Longitude: -104.188130°
North Reference: Grid Grid Convergence: 0.08°
Elevation Above VRD: 3473.00USft
Comment: Eddy Co., NM

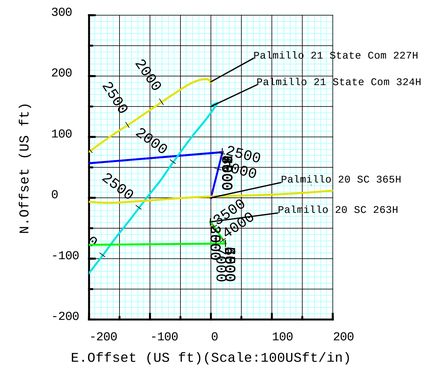
Slot: Palmillo 20 SC 365H
Position:
Offset is from Site centre
+N/-S: -1074.30USftNorthing: 599529.30USft Latitude: 32.648070°
+E/-W: -68.30USft Easting: 585959.70USft Longitude: -104.188356°
Elevation Above VRD: 3459.00USft

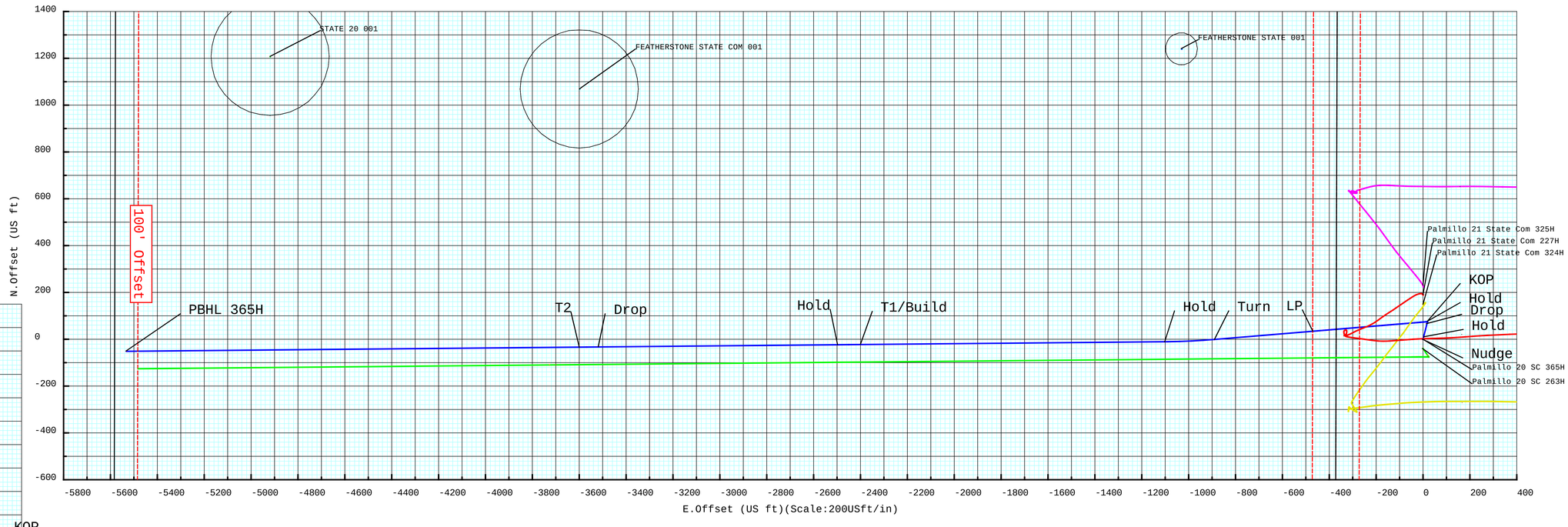
Well: Palmillo 20 SC 365H
Type: Main-Well
File Number:
Plan Folder: P1 Plan: P1:V1
Vertical Section: Position offset of origin from Slot centre:
+N/-S: -0.00USft Azimuth: 269.47°
+E/-W: -0.00USft
Magnetic Parameters:

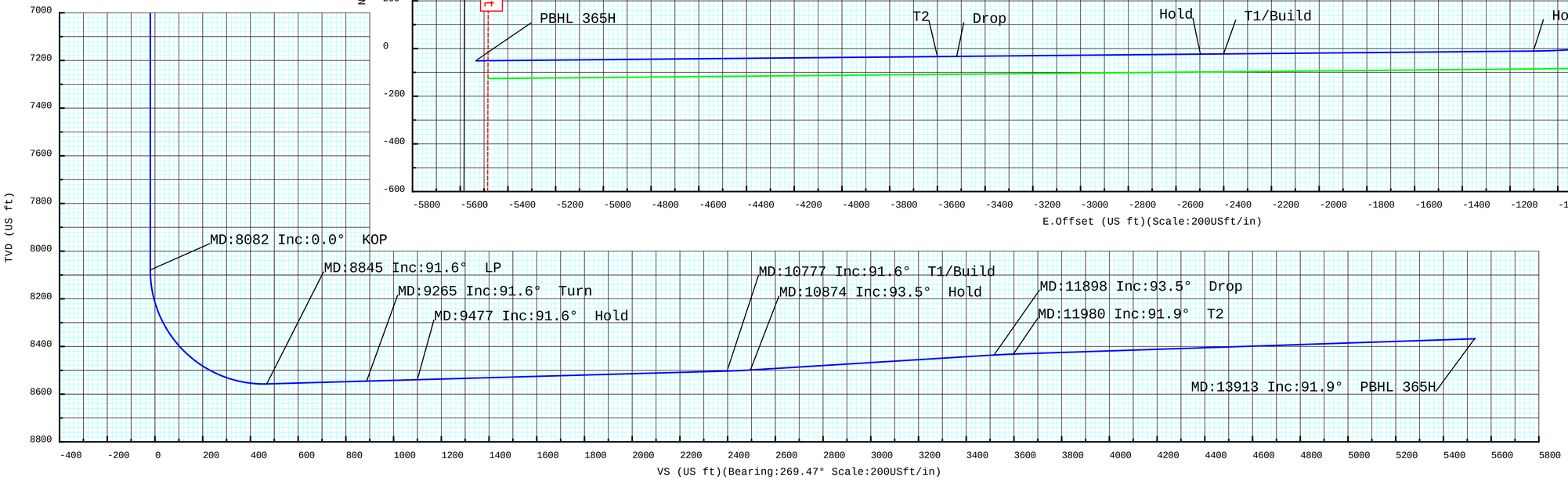
Model:	Field Strength:	Declination:	Dip:	Date:
bggm2019	47870(nT)	7.19°	60.40°	2019-12-25



Grid Convergence: 0.08°
Mag Declination: 7.19°
Bearing:
True = Mag + 7.19°
Grid = True - 0.08°
Total Correction: TBD°







Drawing By: Ty Hardin Date: 25 November 2019
Office Name: Drilling Services - Houston
Address: 12101 Cutten Road
Houston, TX 77066

Phone: +1.713.882.8256

5D Plan Report

Palmillo 20 SC 365H

Field Name: Apache NM (Nad 83 NMEZ)	**Map Units:** US ft	**Company Name:** Apache Corporation	
	Vertical Reference Datum (VRD): Mean Sea Level		
	Projected Coordinate System: NAD83 / New Mexico East (ftUS)		
	Comment:		
Site: Palmillo 20 SC 366H,264H,365H,263H	**Units:** US ft	**North Reference:** Grid	**Convergence Angle:** 0.08
	Position:	**Northing:** 600603.60 US ft	**Latitude:** 32.651022794
		Easting: 586028.00 US ft	**Longitude:** -104.188129605
	Elevation above MSL: 3473.00 US ft		
	Comment: Eddy Co., NM		
Slot: Palmillo 20 SC 365H	**Position (Relative to Site Centre)**		
	+N/-S: -1074.30 US ft	**Northing:** 599529.30 US ft	**Latitude:** 32.648070109
	+E/-W: -68.30 US ft	**Easting:** 585959.70 US ft	**Longitude:** -104.188356283
	Slot TVD Reference: Ground Elevation		
	Elevation above MSL: 3459.00 US ft		
	Comment:		
Well: Palmillo 20 SC 365H	**Type:** Main well	**UWI:**	**Plan:** P1:V1 (Current plan)
	File Number:	**Comment:**	
	Closure Distance: 5532.34US ft	**Closure Azimuth:** 269.47°	
	Vertical Section: Position of Origin (Relative to Slot centre)		
	+N/-S: -0.00 US ft	**+E/-W:** -0.00 US ft	**Az:** 269.47°
	Magnetic Parameters:		
	Model: bggm2019	**Field Strength:** 47870.9nT	**Declination:** 7.19°	**Dip:** 60.40°	**Date:** 25/Dec/2019

Drill floor: Plan: P1:V1 (Current plan)

Rig Height (Drill Floor): 26.00US ft **Elevation above MSL:** 3485.00US ft **Inclination:** 0.00° **Azimuth:** 0.00°

Target set: Palm20SC365 Comment:

Target Name:	Shape:	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (USFt)	Easting (USFt)	C.Pt.Distance (US ft)	Comment
NP 365H	Point	8079.67	75.00	19.00	599604.30	585978.70	0.00	
FTP 365H	Point	0.00	-4.70	-469.90	599524.60	585489.80	469.92	
T1	Point	8502.96	-22.57	-2399.89	599506.73	583559.81	0.00	
T2	Point	8431.76	-33.65	-3599.84	599495.65	582359.86	0.00	
LTP 365H	Point	8369.32	-51.00	-5482.10	599478.30	580477.60	0.04	
PBHL 365H	Point	8367.66	-51.50	-5532.10	599477.80	580427.60	0.00	

5D Plan Report

Tie Point:

MD:	Inclination:	Azimuth:	TVD:	North Offset:	East Offset:
0.00USFt	0.00°	0.00°	0.00USFt	- 0.00USFt	- 0.00USFt

Survey Tool Ranges:

Name	Start MD(USFt)	End MD(USFt)	Source Survey
MWD	0.00	13912.94	Default Tool

Casing Points: (Relative to Slot centre)(TVD relative to Drill Floor)

Name	MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)
13 3/8 in	400.00	0.00	0.00	400.00	-0.00	-0.00	599529.30	585959.70
9 5/8 in	3000.00	0.00	0.00	2997.94	75.00	19.00	599604.30	585978.70

Wellpath created using minimum curvature.

Salient Points: (Relative to Slot centre)(TVD relative to Drill Floor)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
0.00	0.00	0.00	0.00	-0.00	-0.00	-0.00	599529.30	585959.70	0.00	
1000.00	0.00	0.00	1000.00	-0.00	-0.00	-0.00	599529.30	585959.70	0.00	Nudge
1332.77	3.33	14.22	1332.58	-2.46	9.37	2.37	599538.67	585962.07	1.00	Hold
2332.78	3.33	14.22	2330.91	-17.23	65.64	16.63	599594.94	585976.33	0.00	Drop
2665.55	0.00	0.00	2663.49	-19.69	75.00	19.00	599604.30	585978.70	1.00	Hold
8081.73	0.00	0.00	8079.67	-19.69	75.00	19.00	599604.30	585978.70	0.00	KOP
8845.10	91.60	265.23	8556.95	469.79	34.19	-470.13	599563.49	585489.57	12.00	LP
9265.49	91.60	265.23	8545.19	888.87	-0.76	-888.90	599528.54	585070.80	0.00	Turn
9477.40	91.60	269.47	8539.26	1100.50	-10.55	-1100.45	599518.75	584859.25	2.00	Hold
10777.40	91.60	269.47	8502.96	2400.00	-22.57	-2399.89	599506.73	583559.81	0.00	T1/Build
10873.81	93.53	269.47	8498.65	2496.30	-23.46	-2496.19	599505.84	583463.51	2.00	Hold
11898.13	93.53	269.47	8435.61	3518.68	-32.90	-3518.53	599496.40	582441.17	0.00	Drop
11979.54	91.90	269.47	8431.76	3600.00	-33.65	-3599.84	599495.65	582359.86	2.00	T2
13912.94	91.90	269.47	8367.66	5532.34	-51.50	-5532.10	599477.80	580427.60	0.00	PBHL 365H

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
0.00	0.00	0.00	0.00	-0.00	-0.00	-0.00	599529.30	585959.70	0.00	
100.00	0.00	0.00	100.00	-0.00	-0.00	-0.00	599529.30	585959.70	0.00	
200.00	0.00	0.00	200.00	-0.00	-0.00	-0.00	599529.30	585959.70	0.00	
300.00	0.00	0.00	300.00	-0.00	-0.00	-0.00	599529.30	585959.70	0.00	
400.00	0.00	0.00	400.00	-0.00	-0.00	-0.00	599529.30	585959.70	0.00	13 3/8 in
500.00	0.00	0.00	500.00	-0.00	-0.00	-0.00	599529.30	585959.70	0.00	
600.00	0.00	0.00	600.00	-0.00	-0.00	-0.00	599529.30	585959.70	0.00	
700.00	0.00	0.00	700.00	-0.00	-0.00	-0.00	599529.30	585959.70	0.00	
800.00	0.00	0.00	800.00	-0.00	-0.00	-0.00	599529.30	585959.70	0.00	
900.00	0.00	0.00	900.00	-0.00	-0.00	-0.00	599529.30	585959.70	0.00	
1000.00	0.00	0.00	1000.00	-0.00	-0.00	-0.00	599529.30	585959.70	0.00	Nudge
1100.00	1.00	14.22	1099.99	-0.22	0.85	0.21	599530.15	585959.91	1.00	
1200.00	2.00	14.22	1199.96	-0.89	3.38	0.86	599532.68	585960.56	1.00	
1300.00	3.00	14.22	1299.86	-2.00	7.61	1.93	599536.91	585961.63	1.00	
1332.77	3.33	14.22	1332.58	-2.46	9.37	2.37	599538.67	585962.07	1.00	Hold
1400.00	3.33	14.22	1399.70	-3.45	13.15	3.33	599542.45	585963.03	0.00	
1500.00	3.33	14.22	1499.53	-4.93	18.77	4.76	599548.07	585964.46	0.00	
1600.00	3.33	14.22	1599.36	-6.41	24.40	6.18	599553.70	585965.88	0.00	
1700.00	3.33	14.22	1699.19	-7.88	30.03	7.61	599559.33	585967.31	0.00	
1800.00	3.33	14.22	1799.03	-9.36	35.66	9.03	599564.96	585968.73	0.00	
1900.00	3.33	14.22	1898.86	-10.84	41.28	10.46	599570.58	585970.16	0.00	
2000.00	3.33	14.22	1998.69	-12.32	46.91	11.88	599576.21	585971.58	0.00	
2100.00	3.33	14.22	2098.52	-13.79	52.54	13.31	599581.84	585973.01	0.00	
2200.00	3.33	14.22	2198.35	-15.27	58.16	14.73	599587.46	585974.43	0.00	
2300.00	3.33	14.22	2298.18	-16.75	63.79	16.16	599593.09	585975.86	0.00	
2332.78	3.33	14.22	2330.91	-17.23	65.64	16.63	599594.94	585976.33	0.00	Drop
2400.00	2.66	14.22	2398.03	-18.13	69.04	17.49	599598.34	585977.19	1.00	

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
2500.00	1.66	14.22	2497.96	-19.08	72.68	18.41	599601.98	585978.11	1.00	
2600.00	0.66	14.22	2597.94	-19.60	74.64	18.91	599603.94	585978.61	1.00	
2665.55	0.00	0.00	2663.49	-19.69	75.00	19.00	599604.30	585978.70	1.00	Hold
2700.00	0.00	0.00	2697.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
2800.00	0.00	0.00	2797.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
2900.00	0.00	0.00	2897.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
3000.00	0.00	0.00	2997.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	9 5/8 in
3100.00	0.00	0.00	3097.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
3200.00	0.00	0.00	3197.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
3300.00	0.00	0.00	3297.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
3400.00	0.00	0.00	3397.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
3500.00	0.00	0.00	3497.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
3600.00	0.00	0.00	3597.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
3700.00	0.00	0.00	3697.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
3800.00	0.00	0.00	3797.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
3900.00	0.00	0.00	3897.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
4000.00	0.00	0.00	3997.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
4100.00	0.00	0.00	4097.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
4200.00	0.00	0.00	4197.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
4300.00	0.00	0.00	4297.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
4400.00	0.00	0.00	4397.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
4500.00	0.00	0.00	4497.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
4600.00	0.00	0.00	4597.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
4700.00	0.00	0.00	4697.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
4800.00	0.00	0.00	4797.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
4900.00	0.00	0.00	4897.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
5000.00	0.00	0.00	4997.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
5100.00	0.00	0.00	5097.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
5200.00	0.00	0.00	5197.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
5300.00	0.00	0.00	5297.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
5400.00	0.00	0.00	5397.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
5500.00	0.00	0.00	5497.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
5600.00	0.00	0.00	5597.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
5700.00	0.00	0.00	5697.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
5800.00	0.00	0.00	5797.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
5900.00	0.00	0.00	5897.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
6000.00	0.00	0.00	5997.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
6100.00	0.00	0.00	6097.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
6200.00	0.00	0.00	6197.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
6300.00	0.00	0.00	6297.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
6400.00	0.00	0.00	6397.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
6500.00	0.00	0.00	6497.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
6600.00	0.00	0.00	6597.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
6700.00	0.00	0.00	6697.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
6800.00	0.00	0.00	6797.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
6900.00	0.00	0.00	6897.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
7000.00	0.00	0.00	6997.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
7100.00	0.00	0.00	7097.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
7200.00	0.00	0.00	7197.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
7300.00	0.00	0.00	7297.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
7400.00	0.00	0.00	7397.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
7500.00	0.00	0.00	7497.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
7600.00	0.00	0.00	7597.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
7700.00	0.00	0.00	7697.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
7800.00	0.00	0.00	7797.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
7900.00	0.00	0.00	7897.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
8000.00	0.00	0.00	7997.94	-19.69	75.00	19.00	599604.30	585978.70	0.00	
8081.73	0.00	0.00	8079.67	-19.69	75.00	19.00	599604.30	585978.70	0.00	KOP
8100.00	2.19	265.23	8097.94	-19.34	74.97	18.65	599604.27	585978.35	12.00	

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
8200.00	14.19	265.23	8196.73	-5.16	73.79	4.48	599603.09	585964.18	12.00	
8300.00	26.19	265.23	8290.42	29.20	70.92	-29.86	599600.22	585929.84	12.00	
8400.00	38.19	265.23	8374.89	82.23	66.50	-82.85	599595.80	585876.85	12.00	
8500.00	50.19	265.23	8446.46	151.62	60.72	-152.19	599590.02	585807.51	12.00	
8600.00	62.19	265.23	8502.00	234.33	53.82	-234.84	599583.12	585724.86	12.00	
8700.00	74.19	265.23	8539.08	326.75	46.11	-327.19	599575.41	585632.51	12.00	
8800.00	86.19	265.23	8556.08	424.84	37.93	-425.21	599567.23	585534.49	12.00	
8845.10	91.60	265.23	8556.95	469.79	34.19	-470.13	599563.49	585489.57	12.00	LP
8900.00	91.60	265.23	8555.41	524.52	29.62	-524.82	599558.92	585434.88	0.00	
9000.00	91.60	265.23	8552.62	624.21	21.31	-624.43	599550.61	585335.27	0.00	
9100.00	91.60	265.23	8549.82	723.90	13.00	-724.05	599542.30	585235.65	0.00	
9200.00	91.60	265.23	8547.02	823.58	4.69	-823.66	599533.99	585136.04	0.00	
9265.49	91.60	265.23	8545.19	888.87	-0.76	-888.90	599528.54	585070.80	0.00	Turn
9300.00	91.60	265.92	8544.22	923.29	-3.42	-923.29	599525.88	585036.41	2.00	
9400.00	91.60	267.92	8541.42	1023.14	-8.79	-1023.10	599520.51	584936.60	2.00	
9477.40	91.60	269.47	8539.26	1100.50	-10.55	-1100.45	599518.75	584859.25	2.00	Hold
9500.00	91.60	269.47	8538.63	1123.09	-10.76	-1123.04	599518.54	584836.66	0.00	
9600.00	91.60	269.47	8535.84	1223.05	-11.68	-1223.00	599517.62	584736.70	0.00	
9700.00	91.60	269.47	8533.05	1323.02	-12.61	-1322.96	599516.69	584636.74	0.00	
9800.00	91.60	269.47	8530.25	1422.98	-13.53	-1422.91	599515.77	584536.79	0.00	
9900.00	91.60	269.47	8527.46	1522.94	-14.46	-1522.87	599514.84	584436.83	0.00	
10000.00	91.60	269.47	8524.67	1622.90	-15.38	-1622.83	599513.92	584336.87	0.00	
10100.00	91.60	269.47	8521.88	1722.86	-16.31	-1722.78	599512.99	584236.92	0.00	
10200.00	91.60	269.47	8519.08	1822.82	-17.23	-1822.74	599512.07	584136.96	0.00	
10300.00	91.60	269.47	8516.29	1922.78	-18.15	-1922.70	599511.15	584037.00	0.00	
10400.00	91.60	269.47	8513.50	2022.74	-19.08	-2022.65	599510.22	583937.05	0.00	
10500.00	91.60	269.47	8510.71	2122.70	-20.00	-2122.61	599509.30	583837.09	0.00	
10600.00	91.60	269.47	8507.92	2222.66	-20.93	-2222.57	599508.37	583737.13	0.00	
10700.00	91.60	269.47	8505.12	2322.63	-21.85	-2322.52	599507.45	583637.18	0.00	
10777.40	91.60	269.47	8502.96	2400.00	-22.57	-2399.89	599506.73	583559.81	0.00	T1/Build
10800.00	92.05	269.47	8502.24	2422.58	-22.78	-2422.48	599506.52	583537.22	2.00	
10873.81	93.53	269.47	8498.65	2496.30	-23.46	-2496.19	599505.84	583463.51	2.00	Hold
10900.00	93.53	269.47	8497.04	2522.45	-23.70	-2522.33	599505.60	583437.37	0.00	
11000.00	93.53	269.47	8490.88	2622.26	-24.62	-2622.14	599504.68	583337.56	0.00	
11100.00	93.53	269.47	8484.73	2722.07	-25.54	-2721.95	599503.76	583237.75	0.00	
11200.00	93.53	269.47	8478.58	2821.88	-26.47	-2821.75	599502.83	583137.95	0.00	
11300.00	93.53	269.47	8472.42	2921.69	-27.39	-2921.56	599501.91	583038.14	0.00	
11400.00	93.53	269.47	8466.27	3021.50	-28.31	-3021.36	599500.99	582938.34	0.00	
11500.00	93.53	269.47	8460.12	3121.31	-29.23	-3121.17	599500.07	582838.53	0.00	
11600.00	93.53	269.47	8453.96	3221.12	-30.15	-3220.98	599499.15	582738.72	0.00	
11700.00	93.53	269.47	8447.81	3320.93	-31.07	-3320.78	599498.23	582638.92	0.00	
11800.00	93.53	269.47	8441.65	3420.74	-31.99	-3420.59	599497.31	582539.11	0.00	
11898.13	93.53	269.47	8435.61	3518.68	-32.90	-3518.53	599496.40	582441.17	0.00	Drop
11900.00	93.49	269.47	8435.50	3520.55	-32.92	-3520.40	599496.38	582439.30	2.00	
11979.54	91.90	269.47	8431.76	3600.00	-33.65	-3599.84	599495.65	582359.86	2.00	T2
12000.00	91.90	269.47	8431.08	3620.45	-33.84	-3620.29	599495.46	582339.41	0.00	
12100.00	91.90	269.47	8427.77	3720.39	-34.76	-3720.23	599494.54	582239.47	0.00	
12200.00	91.90	269.47	8424.45	3820.34	-35.69	-3820.17	599493.61	582139.53	0.00	
12300.00	91.90	269.47	8421.14	3920.28	-36.61	-3920.11	599492.69	582039.59	0.00	
12400.00	91.90	269.47	8417.82	4020.23	-37.53	-4020.05	599491.77	581939.65	0.00	
12500.00	91.90	269.47	8414.50	4120.17	-38.46	-4119.99	599490.84	581839.71	0.00	
12600.00	91.90	269.47	8411.19	4220.12	-39.38	-4219.93	599489.92	581739.77	0.00	
12700.00	91.90	269.47	8407.87	4320.06	-40.30	-4319.88	599489.00	581639.82	0.00	
12800.00	91.90	269.47	8404.56	4420.01	-41.22	-4419.82	599488.08	581539.88	0.00	
12900.00	91.90	269.47	8401.24	4519.95	-42.15	-4519.76	599487.15	581439.94	0.00	
13000.00	91.90	269.47	8397.93	4619.90	-43.07	-4619.70	599486.23	581340.00	0.00	
13100.00	91.90	269.47	8394.61	4719.84	-43.99	-4719.64	599485.31	581240.06	0.00	
13200.00	91.90	269.47	8391.30	4819.79	-44.92	-4819.58	599484.38	581140.12	0.00	
13300.00	91.90	269.47	8387.98	4919.73	-45.84	-4919.52	599483.46	581040.18	0.00	

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
13400.00	91.90	269.47	8384.67	5019.68	-46.76	-5019.46	599482.54	580940.24	0.00	
13500.00	91.90	269.47	8381.35	5119.62	-47.69	-5119.40	599481.61	580840.30	0.00	
13600.00	91.90	269.47	8378.04	5219.57	-48.61	-5219.34	599480.69	580740.36	0.00	
13700.00	91.90	269.47	8374.72	5319.51	-49.53	-5319.28	599479.77	580640.42	0.00	
13800.00	91.90	269.47	8371.40	5419.46	-50.46	-5419.22	599478.84	580540.48	0.00	
13900.00	91.90	269.47	8368.09	5519.40	-51.38	-5519.16	599477.92	580440.54	0.00	
13912.94	91.90	269.47	8367.66	5532.34	-51.50	-5532.10	599477.80	580427.60	0.00	PBHL 365H

5D Anti-Collision Report

Apache Corporation

Field Name: *Apache NM (Nad 83 NMEZ)*
Site Name: *Palmillo 20 SC 366H,264H,365H,263H*
Well Name: *Palmillo 20 SC 365H*

25 November 2019

5D Anti-Collision Report

Palmillo 20 SC 365H

Field Name: Apache NM (Nad 83 NMEZ)	**Map Units:** US ft	**Company Name:** Apache Corporation	
	Vertical Reference Datum (VRD): Mean Sea Level		
	Projected Coordinate System: NAD83 / New Mexico East (ftUS)		
	Comment:		
Site: Palmillo 20 SC 366H,264H,365H,263H	**Units:** US ft	**North Reference:** Grid	**Convergence Angle:** 0.08
	Position:	**Northing:** 600603.60 US ft	**Latitude:** 32.651022794
		Easting: 586028.00 US ft	**Longitude:** -104.188129605
	Elevation above MSL: 3473.00 US ft		
	Comment: Eddy Co., NM		
Slot: Palmillo 20 SC 365H	**Position (Relative to Site Centre)**		
	+N/-S: -1074.30 US ft	**Northing:** 599529.30 US ft	**Latitude:** 32.648070109
	+E/-W: -68.30 US ft	**Easting:** 585959.70 US ft	**Longitude:** -104.188356283
	Slot TVD Reference: Ground Elevation		
	Elevation above MSL: 3459.00 US ft		
	Comment:		
Well: Palmillo 20 SC 365H	**Type:** Main well	**UWI:**	**Plan:** P1:V1
	File Number:	**Comment:**	
	Closure Distance: 5532.34US ft	**Closure Azimuth:** 269.47°	
	Vertical Section: Position of Origin (Relative to Slot centre)		
		+N/-S: -0.00 US ft **+E/-W:** -0.00 US ft **Az:** 269.47°	
	Magnetic Parameters:		
	Model: bggm2019 **Field Strength:** 47870.9nT	**Declination:** 7.19°	**Dip:** 60.40° **Date:** 25/Dec/2019

Drill floor: Plan: P1:V1

Rig Height (Drill Floor): 26.00US ft **Elevation above MSL:** 3485.00US ft **Inclination:** 0.00° **Azimuth:** 0.00°

5D Anti-Collision Report

Anti-Collision Analysis Criteria

Primary Well	Palmillo 20 SC 365H (p)

Depth Range	0.00 - 13912.94 US ft	**Analysis Interval**	100.00US ft	
Orientation of Ellipsoid dimensions	Wellbore (High Side, Lateral, Along Hole)	**AC Filter Info:**	Separation Factor:	5
Separation Factor Method	STANDARD	**Uncertainties computed at**	2σ	
Analysis Method	Vector Separation	**Ellipsoid Combination Method**	Independent	
Surface uncertainty	Not Applied			

Secondary Well Names:	BIGFOOT STATE 001 (s), STATE 20 001 (s), FEATHERSTONE STATE COM 001 (s), FEATHERSTONE STATE 001 (s), Palmillo 21 State Com 325H (s), Palmillo 21 State Com 227H (s), Palmillo 21 State Com 324H (s), Palmillo 20 SC 263H (p)

Report Terminology

Ellipsoid Parameters	
TVD Spread:	Dimension in the TVD Direction.
Ellipse Parameters	
S.Minor, S.Major:	Dimensions of the bounding ellipse in the High Side, Lateral plane.
PHI:	Angle between HS and S.Minor axes.
AC Parameters	
ES:	Distance between the extremities of the primary and secondary uncertainty ellipsoids in the direction Cr-Cr.
CC:	3D closest approach distance from a point on the primary well to the secondary well.
T.Face to Sec:	Angle between the Hi-Side vector of the primary well at the current location and line of closest approach between the two wells.

Survey Tool Ranges:

Name	Start MD(USFt)	End MD(USFt)	Source Survey
MWD	0.00	13912.94	Default Tool

Wellpath created using minimum curvature.

5D Anti-Collision Report

Anti-Collision Summary (TVD relative to Drill Floor)

SF

Secondary Well Name	Pri MD (US ft)	Pri TVD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	ES (US ft)	CC (US ft)	SF	Risk
Palmillo 21 State Com 227H (s)	7291.80	7289.74	7448.95	7290.08	48.63	72.28	3.06	
FEATHERSTONE STATE COM 001 (s)	11967.58	8432.18	8452.18	8432.18	748.60	1102.10	3.12	
STATE 20 001 (s)	13283.40	8388.53	8427.53	8388.53	864.19	1252.80	3.22	
BIGFOOT STATE 001 (s)	11831.64	8439.71	8478.71	8439.71	1016.57	1367.25	3.90	
Palmillo 20 SC 263H (p)	7000.20	6998.14	6997.73	6995.63	119.25	150.61	4.80	
Palmillo 21 State Com 324H (s)	1921.68	1920.50	1923.24	1917.98	63.18	69.62	10.81	
FEATHERSTONE STATE 001 (s)	2348.24	2346.34	2349.00	2346.00	1497.78	1572.15	21.14	
Palmillo 21 State Com 325H (s)	8412.30	8384.46	8495.02	8385.83	561.83	588.19	22.31	

CC

Secondary Well Name	Pri MD (US ft)	Pri TVD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	ES (US ft)	CC (US ft)	SF	Risk
Palmillo 20 SC 263H (p)	0.00	0.00	0.00	0.00	38.89	40.00	35.89	
Palmillo 21 State Com 324H (s)	1890.23	1889.11	1892.77	1888.00	62.85	69.21	10.88	
Palmillo 21 State Com 227H (s)	7292.19	7290.13	7449.10	7290.14	48.63	72.28	3.06	
Palmillo 21 State Com 325H (s)	842.58	842.58	841.61	842.58	219.77	223.43	60.91	
FEATHERSTONE STATE COM 001 (s)	11967.77	8432.17	8452.17	8432.17	748.60	1102.10	3.12	
STATE 20 001 (s)	13287.11	8388.41	8427.41	8388.41	864.21	1252.80	3.22	
BIGFOOT STATE 001 (s)	11799.41	8441.69	8480.69	8441.69	1017.01	1366.87	3.91	
FEATHERSTONE STATE 001 (s)	2390.23	2388.28	2349.00	2346.00	1504.81	1571.50	23.57	

Primary Well: Palmillo 20 SC 365H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)

Pri MD (US ft)	Inc (°)	Az (°)	Pri TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Nearest Well	Risk
6700.00	0.00	0.00	6697.94	14.79	14.76	178.09	120.23	150.28	5.00	Palmillo 20 SC 263H (p)	
6800.00	0.00	0.00	6797.94	15.02	14.99	178.09	119.78	150.28	4.93	Palmillo 20 SC 263H (p)	
6900.00	0.00	0.00	6897.94	15.24	15.21	178.20	119.33	150.28	4.86	Palmillo 20 SC 263H (p)	
7000.00	0.00	0.00	6997.94	15.47	15.44	183.33	119.25	150.60	4.80	Palmillo 20 SC 263H (p)	
7100.00	0.00	0.00	7097.94	15.69	15.66	194.20	125.03	156.38	4.99	Palmillo 20 SC 263H (p)	
7300.00	0.00	0.00	7297.94	16.14	16.11	176.12	49.13	72.63	3.09	Palmillo 21 State Com 227H (s)	
11100.00	93.53	269.47	8484.73	75.94	22.58	92.77	1115.73	1401.76	4.90	FEATHERSTONE STATE COM 001 (s)	
11200.00	93.53	269.47	8478.58	78.61	23.21	92.45	1054.27	1342.38	4.66	FEATHERSTONE STATE COM 001 (s)	
11300.00	93.53	269.47	8472.42	81.28	23.85	92.13	997.12	1288.01	4.43	FEATHERSTONE STATE COM 001 (s)	
11400.00	93.53	269.47	8466.27	83.96	24.49	91.81	944.61	1239.30	4.21	FEATHERSTONE STATE COM 001 (s)	
11500.00	93.53	269.47	8460.12	86.64	25.13	91.49	896.93	1196.95	3.99	FEATHERSTONE STATE	

5D Anti-Collision Report

Primary Well: Palmillo 20 SC 365H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)

Pri MD (US ft)	Inc (°)	Az (°)	Pri TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Nearest Well	Risk
										COM 001 (s)	
11600.00	93.53	269.47	8453.96	89.32	25.78	91.17	854.02	1161.65	3.78	FEATHERST ONE STATE COM 001 (s)	
11700.00	93.53	269.47	8447.81	92.02	26.43	90.86	815.46	1134.06	3.56	FEATHERST ONE STATE COM 001 (s)	
11800.00	93.53	269.47	8441.65	94.71	27.09	90.54	781.13	1114.76	3.34	FEATHERST ONE STATE COM 001 (s)	
11900.00	93.49	269.47	8435.50	97.41	27.75	90.21	755.03	1104.18	3.16	FEATHERST ONE STATE COM 001 (s)	
12000.00	91.90	269.47	8431.08	100.11	28.41	89.94	750.13	1102.57	3.13	FEATHERST ONE STATE COM 001 (s)	
12100.00	91.90	269.47	8427.77	102.81	29.08	89.77	770.55	1109.99	3.27	FEATHERST ONE STATE COM 001 (s)	
12200.00	91.90	269.47	8424.45	105.52	29.76	89.60	803.03	1126.27	3.48	FEATHERST ONE STATE COM 001 (s)	
12300.00	91.90	269.47	8421.14	108.24	30.43	89.43	840.39	1151.03	3.71	FEATHERST ONE STATE COM 001 (s)	
12400.00	91.90	269.47	8417.82	110.95	31.11	89.26	881.97	1183.73	3.92	FEATHERST ONE STATE COM 001 (s)	
12500.00	91.90	269.47	8414.50	113.67	31.79	89.08	928.24	1223.75	4.14	FEATHERST ONE STATE COM 001 (s)	
12600.00	91.90	269.47	8411.19	116.39	32.48	88.91	979.38	1270.38	4.37	FEATHERST ONE STATE COM 001 (s)	
12700.00	91.90	269.47	8407.87	119.11	33.16	88.74	1035.27	1322.93	4.60	FEATHERST ONE STATE COM 001 (s)	
12800.00	91.90	269.47	8404.56	121.83	33.85	90.74	1038.70	1344.03	4.40	STATE 20 001 (s)	
12900.00	91.90	269.47	8401.24	124.56	34.54	90.59	996.26	1311.15	4.16	STATE 20 001 (s)	
13000.00	91.90	269.47	8397.93	127.28	35.23	90.43	956.07	1285.22	3.90	STATE 20 001 (s)	
13100.00	91.90	269.47	8394.61	130.01	35.92	90.28	916.27	1266.66	3.62	STATE 20 001 (s)	
13200.00	91.90	269.47	8391.30	132.74	36.62	90.13	878.88	1255.81	3.33	STATE 20 001 (s)	
13300.00	91.90	269.47	8387.98	135.47	37.32	89.98	864.79	1252.86	3.23	STATE 20 001 (s)	
13400.00	91.90	269.47	8384.67	138.20	38.01	89.83	889.67	1257.87	3.42	STATE 20 001 (s)	
13500.00	91.90	269.47	8381.35	140.93	38.71	89.68	928.27	1270.75	3.71	STATE 20 001 (s)	
13600.00	91.90	269.47	8378.04	143.66	39.41	89.53	967.50	1291.26	3.99	STATE 20 001 (s)	
13700.00	91.90	269.47	8374.72	146.39	40.11	89.37	1007.80	1319.04	4.24	STATE 20 001 (s)	
13800.00	91.90	269.47	8371.40	149.13	40.82	89.22	1050.95	1353.65	4.47	STATE 20 001 (s)	
13900.00	91.90	269.47	8368.09	151.86	41.52	89.07	1097.91	1394.57	4.70	STATE 20 001 (s)	
13912.94	91.90	269.47	8367.66	152.22	41.61	89.05	1104.29	1400.30	4.73	STATE 20 001 (s)	

5D Anti-Collision Report

Secondary Well: BIGFOOT STATE 001 (s)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)

Pri MD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	Pri TVD (US ft)	Inc (°)	Az (°)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Risk
11300.00	8511.42	8472.42	8472.42	0.00	0.00	255.53	255.53	268.71	1152.81	1454.91	4.82	
11400.00	8505.27	8466.27	8466.27	0.00	0.00	255.34	255.34	268.97	1115.19	1423.81	4.61	
11500.00	8499.12	8460.12	8460.12	0.00	0.00	255.16	255.16	269.23	1081.83	1399.15	4.41	
11600.00	8492.96	8453.96	8453.96	0.00	0.00	254.97	254.97	269.49	1052.74	1381.28	4.20	
11700.00	8486.81	8447.81	8447.81	0.00	0.00	254.78	254.78	269.74	1029.38	1370.46	4.02	
11800.00	8480.65	8441.65	8441.65	0.00	0.00	254.60	254.60	270.00	1016.98	1366.87	3.91	
11900.00	8474.50	8435.50	8435.50	0.00	0.00	254.41	254.41	270.26	1022.21	1370.56	3.93	
12000.00	8470.08	8431.08	8431.08	0.00	0.00	254.28	254.28	270.28	1043.59	1381.47	4.09	
12100.00	8466.77	8427.77	8427.77	0.00	0.00	254.18	254.18	270.42	1073.98	1399.46	4.30	
12200.00	8463.45	8424.45	8424.45	0.00	0.00	254.07	254.07	270.56	1109.36	1424.26	4.52	
12300.00	8460.14	8421.14	8421.14	0.00	0.00	253.97	253.97	270.70	1148.77	1455.51	4.75	
12400.00	8456.82	8417.82	8417.82	0.00	0.00	253.87	253.87	270.83	1192.25	1492.81	4.97	

Secondary Well: STATE 20 001 (s)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)

Pri MD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	Pri TVD (US ft)	Inc (°)	Az (°)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Risk
12600.00	8450.19	8411.19	8411.19	0.00	0.00	253.66	253.66	91.04	1134.66	1428.63	4.86	
12700.00	8446.87	8407.87	8407.87	0.00	0.00	253.55	253.55	90.89	1084.66	1383.37	4.63	
12800.00	8443.56	8404.56	8404.56	0.00	0.00	253.45	253.45	90.74	1038.70	1344.03	4.40	
12900.00	8440.24	8401.24	8401.24	0.00	0.00	253.35	253.35	90.59	996.26	1311.15	4.16	
13000.00	8436.93	8397.93	8397.93	0.00	0.00	253.25	253.25	90.43	956.07	1285.22	3.90	
13100.00	8433.61	8394.61	8394.61	0.00	0.00	253.15	253.15	90.28	916.27	1266.66	3.62	
13200.00	8430.30	8391.30	8391.30	0.00	0.00	253.05	253.05	90.13	878.88	1255.81	3.33	
13300.00	8426.98	8387.98	8387.98	0.00	0.00	252.95	252.95	89.98	864.79	1252.86	3.23	
13400.00	8423.67	8384.67	8384.67	0.00	0.00	252.85	252.85	89.83	889.67	1257.87	3.42	
13500.00	8420.35	8381.35	8381.35	0.00	0.00	252.75	252.75	89.68	928.27	1270.75	3.71	
13600.00	8417.04	8378.04	8378.04	0.00	0.00	252.65	252.65	89.53	967.50	1291.26	3.99	
13700.00	8413.72	8374.72	8374.72	0.00	0.00	252.55	252.55	89.37	1007.80	1319.04	4.24	
13800.00	8410.40	8371.40	8371.40	0.00	0.00	252.45	252.45	89.22	1050.95	1353.65	4.47	
13900.00	8407.09	8368.09	8368.09	0.00	0.00	252.35	252.35	89.07	1097.91	1394.57	4.70	
13912.94	8406.66	8367.66	8367.66	0.00	0.00	252.33	252.33	89.05	1104.29	1400.30	4.73	

Secondary Well: FEATHERSTONE STATE COM 001 (s)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)

Pri MD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	Pri TVD (US ft)	Inc (°)	Az (°)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Risk
11100.00	8504.73	8484.73	8484.73	0.00	0.00	255.29	255.29	92.77	1115.73	1401.76	4.90	
11200.00	8498.58	8478.58	8478.58	0.00	0.00	255.11	255.11	92.45	1054.27	1342.38	4.66	
11300.00	8492.42	8472.42	8472.42	0.00	0.00	254.92	254.92	92.13	997.12	1288.01	4.43	
11400.00	8486.27	8466.27	8466.27	0.00	0.00	254.73	254.73	91.81	944.61	1239.30	4.21	
11500.00	8480.12	8460.12	8460.12	0.00	0.00	254.55	254.55	91.49	896.93	1196.95	3.99	
11600.00	8473.96	8453.96	8453.96	0.00	0.00	254.36	254.36	91.17	854.02	1161.65	3.78	
11700.00	8467.81	8447.81	8447.81	0.00	0.00	254.17	254.17	90.86	815.46	1134.06	3.56	
11800.00	8461.65	8441.65	8441.65	0.00	0.00	253.99	253.99	90.54	781.13	1114.76	3.34	
11900.00	8455.50	8435.50	8435.50	0.00	0.00	253.80	253.80	90.21	755.03	1104.18	3.16	
12000.00	8451.08	8431.08	8431.08	0.00	0.00	253.67	253.67	89.94	750.13	1102.57	3.13	
12100.00	8447.77	8427.77	8427.77	0.00	0.00	253.56	253.56	89.77	770.55	1109.99	3.27	
12200.00	8444.45	8424.45	8424.45	0.00	0.00	253.46	253.46	89.60	803.03	1126.27	3.48	
12300.00	8441.14	8421.14	8421.14	0.00	0.00	253.36	253.36	89.43	840.39	1151.03	3.71	
12400.00	8437.82	8417.82	8417.82	0.00	0.00	253.26	253.26	89.26	881.97	1183.73	3.92	
12500.00	8434.50	8414.50	8414.50	0.00	0.00	253.16	253.16	89.08	928.24	1223.75	4.14	
12600.00	8431.19	8411.19	8411.19	0.00	0.00	253.06	253.06	88.91	979.38	1270.38	4.37	
12700.00	8427.87	8407.87	8407.87	0.00	0.00	252.96	252.96	88.74	1035.27	1322.93	4.60	
12800.00	8424.56	8404.56	8404.56	0.00	0.00	252.86	252.86	88.57	1095.60	1380.73	4.84	

Secondary Well: Palmillo 21 State Com 227H (s)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)

Pri MD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	Pri TVD (US ft)	Inc (°)	Az (°)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Risk
7300.00	7452.15	7291.37	7297.94	66.50	88.38	7.34	6.76	176.12	49.13	72.63	3.09	

5D Anti-Collision Report

Secondary Well: Palmillo 20 SC 263H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	Pri TVD (US ft)	Inc (°)	Az (°)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Risk
6700.00	6698.93	6697.94	6697.94	0.00	0.00	14.56	14.54	178.09	120.23	150.28	5.00	
6800.00	6798.93	6797.94	6797.94	0.00	0.00	14.79	14.77	178.09	119.78	150.28	4.93	
6900.00	6899.05	6898.05	6897.94	1.97	269.47	15.01	14.98	178.20	119.33	150.28	4.86	
7000.00	6997.55	6995.45	6997.94	13.79	269.47	15.20	14.89	183.33	119.25	150.60	4.80	
7100.00	7087.10	7079.92	7097.94	24.53	269.47	15.38	14.45	194.20	125.03	156.38	4.99	

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811 S. First St., Artesia, NM 88210
District III
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District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original to Appropriate District Office

GAS CAPTURE PLAN

☒ Original Operator: Apache Corporation OGRID No: 873 Date: ___12/11/19_____
☐ Amended Date: _____
Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: A C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule 19.15.18.12.A

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Palmillo 20 State Com 263H		Sec 20 T19S R28E	1945' FNL & 370' FWL	1400	Flared	Flared only in emergency
Palmillo 20 State Com 365H		Sec 20 T19S R28E	1905' FNL & 370' FWL	1400	Flared	Flared only in emergency
Palmillo 20 State Com 366H		Sec 20 T19S R28E	831' FNL & 435' FWL	1400	Flared	Flare only in emergency
Palmillo 20 State Com 264H		Sec 20 T19S R28E	851' FNL & 435' FWL	1400	Flared	Flared only in emergency

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete if gas transporter system is in place. The gas produced from production facility is dedicated to **DURANGO MIDSTREAM, LLC** and will be connected to **DURANGO's LOW** pressure gathering system located in **EDDY** County, New Mexico. It will require **2500** ft of pipeline to connect the facility to **LOW** pressure gathering system. Apache Corporation provides (periodically) to **DURANGO MIDSTREAM, LLC** a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Apache Corporation and **DURANGO MIDSTREAM, LLC** have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at **DURANGO's MALJAMAR** Processing Plant located in **Sec. 28, Twp 17S, Rng 32E, LEA County**, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on **DURANGO MIDSTREAM, LLC** system at that time. Based on current information, it is Apache Corporation's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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